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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,734	01/20/2004	William David Stewart	N1934	3803
23456	7590	11/13/2006	EXAMINER	
WADDEY & PATTERSON, P.C. 1600 DIVISION STREET, SUITE 500 NASHVILLE, TN 37203			MCCALL, ERIC SCOTT	
			ART UNIT	PAPER NUMBER

2855

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,734

Applicant(s)

STEWART ET AL.

Examiner

Eric S. McCall

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-12 and 35-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 11, 12 and 35-41 is/are rejected.
- 7) ☒ Claim(s) 10, 42 and 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/05/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETERMINATION OF WHEEL SENSOR POSITION
USING SHOCK SENSORS AND A WIRELESS SOLUTION

FINAL OFFICE ACTION

In response to the Applicant's correspondence dated Aug. 28, 2006.

FORMAL MATTERS

The Examiner notes that the Applicant indicated claims 1-8 and 13-34 as being withdrawn in the amendment of June 30, 2006. However, the Examiner points out that these claims were cancelled in the Applicant's amendment dated Nov. 28, 2005.

In the Aug. 28, 2006 response, the Applicant has acknowledged that claims 1-8 are cancelled and not withdrawn. The Examiner points out that claims 13-34, which were not addressed in the Aug. 28, 2006 response, are also cancelled and not withdrawn.

Furthermore, the Applicant has indicated in the June 30, 2006 amendment that claims 36-43 are original claims. The Examiner points out that these claims are not original claims. These claims were added in the June 30, 2006 amendment well after the filing date of Jan 20, 2004.

SPECIFICATION

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. The Applicant's cooperation is requested in correcting any errors of which the Applicant may become aware in the specification.

CLAIMS

Objections

In view of the Applicant's amendment, the objection of claim 9 as set forth in the previous office action (Jan. 30, 2006) has been overcome.

35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9, 11, 12, 35, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by the Applicant's admitted prior art of Wacker et al. (6,204,758).

With respect to claim 9, Wacker et al. set forth a tire monitor configured for mounting on a vehicle (see Fig. 9), the tire monitor comprising:

- a first shock sensor (902) to produce a first motion signal;
- a second shock sensor (904) to produce a second motion signal; and
- a control circuit (912) coupled to the first shock sensor and the second shock to determine right side and left side position information for the tire monitor based on the first motion signal and the second motion signal (col. 3, lines 3-9).

With respect to claim 11, Wacker et al. set forth that the control circuit is configured to determine the right side and left side position information for the tire monitor based on the sign of the detected tangential acceleration (col. 4, lines 32-34), and thus the control circuit of Wacker et al. is deemed as being configured to determine the right side and left side position information for the tire monitor based on a lag - lead relationship (ie. the sign of the acceleration) of the first motion signal and the second motion signal as claimed.

With respect to claim 12, Wacker et al. set forth a tire condition sensor (908) to produce a tire condition signal; and

- a radio circuit (914) coupled to the control circuit (912) to transmit radio signals based at least in part on the tire condition signal.

With respect to claim 35, Wacker et al. set forth a remote tire monitor system comprising:

a control unit; and

a plurality of tire monitors (100) mountable on respective wheels of a vehicle to transmit radio signals to the control unit (col. 7, lines 59-61), the respective tire monitors each including,

a pair of shock sensors (902 & 904) to produce first and second sensor signals which are proportional to a change in force applied to the sensors, and

a control circuit (912) configured to determine right side-left side position information for the respective tire monitor based on the first and second sensor signals from the pair of sensors.

With respect to claim 36, Wacker et al. suggest in Fig. 9 a first piezoelectric sensor (902) mounted to produce the first sensor signal in response to a change in force applied along a first axis; and

a second piezoelectric sensor (904) mounted to produce the second sensor signal in response to a change in force applied along a second axis as claimed.

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted prior art of Wacker et al. (6,204,758).

With respect to claim 37, Wacker et al. suggest the pair of shock sensors being that of first and second piezoelectric sensors but fail to set forth the pair of shock sensors being that of first and second piezoceramic sensors.

However, it would have been obvious to one having ordinary skill in the art armed with the said teaching to use piezoceramic sensors as the pair of shock sensor instead of the specific shock sensors as taught.

The motivation being that Wacker et al. set forth the pair of shock sensors being that of accelerometers and just as are piezoelectric sensors common accelerometers so are piezoceramic sensors.

Claims 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted prior art of Wacker et al. (6,204,758) in view of the admitted prior art of King et al. (6,788,193).

With respect to claims 38 and 39, Wacker et al. fail to set forth a received signal strength indication circuit as claimed.

However, King et al. do set forth a received signal strength indication circuit to determine the relative strength of the transmitted radio signals from tire monitors received at the control unit (col. 2, lines 32-37 and col. 6, lines 18+).

As such, it would have been obvious to one having ordinary skill in the art armed with said teachings to combine the signal strength indication circuit of King et al. with the system of Wacker et al.

The motivation being that by determining the relative strength of the received transmitted radio signals as set forth by King et al., information regarding a specific tire can be associated with the position of that tire in the Wacker et al. teaching (King et al.; col. 2, lines 32+).

With respect to claim 40, King et al. set forth that the control unit is configured to determine respective positions of the plurality of tire monitors on the vehicle in response to the position information in the radio signals transmitted by respective tire monitors and the relative signal strength of the transmitted radio signals (col. 6, lines 18+).

With respect to claim 41, the teaching combination of Wacker et al. in view of King et al. suggest that the transmitted radio signals include right side and left side position information determined at the respective tire monitors in response to the first and second sensor signals (as set forth above with respect to the Wacker et al. teaching) and wherein the control unit determines forward and rear position information for the respective tire monitors based on the

relative signal strength of the transmitted radio signals (as set forth above with respect to the King et al. teaching).

Allowable Subject Matter

Claims 10, 42, and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

The Applicant's arguments have been considered but have not been found to be persuasive. Specifically, the Applicant has argued that the accelerometers of the applied prior art of Wacker et al. are not shock sensors. The Examiner disagrees. The term "shock sensors" is generic terminology and since accelerometers are capable of detecting a "shock", in which the word "shock" itself is a vague term, accelerometers can be interpreted as shock sensors as claimed. Nothing in the Applicant's independent claim 9 sets forth limitations which would distinguish a shock sensor as argued over an accelerometer. With respect to independent claim 35, the Applicant argues that the claim requires that the sensors produce signals proportional to the *change* in force applied to the sensors. However, the Examiner points out that accelerometers are capable of producing signals *proportional* to the change in force as claimed.

Next, the Applicant argues that independent claims 9 and 35 require that the right side-left side position of the tire be based on two separate signals produced by the two sensors. The Examiner argues that the prior art of Wacker et al. does base right side - left side position on signals of a plurality of sensors (col. 3, lines 3+), for the citation pointed to by the Applicant (col. 4, line 32) recites just one example of the system's operation.

The Examiner points out that the teaching of Wacker et al. is made up of a plurality of sensors and the determination of the tire monitor location is based on more than just one sensor output.

CONCLUSION

THIS ACTION IS MADE FINAL. The Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric S. McCall whose telephone number is (571) 272-2183.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eric S. McCall
Primary Examiner
Art Unit 2855
Nov. 07, 2006